March 20, 2008

Re: Comments received for Class I Air Quality Operating Permit to Construct, Proposed Permit #AP3241-2201, FIN #A0030 for Nevada Cement Company

Dear Commenter:

The Nevada Division of Environmental Protection - Bureau of Air Pollution Control (NDEP-BAPC) has received several comments orally and written for Nevada Cement Company's (NCC) Class I Air Quality Operating Permit to Construct (OPTC), Proposed Permit #AP3241-2201, FIN #A0030. The attached "Response to Comments on the Draft Operating Permit to Construct for NCC" provides summary of comments and related responses.

The Response to Comments and final OPTC Permit are available on NDEP-BAPC's website for review (http://ndep.nv.gov/bapc/ncc.html).

If you have any questions, please call Tobarak Ullah, P.E. at 775-687-9341 or myself at (775) 687-9391.

Sincerely,

Matthew A. DeBurle, P.E.
Supervisor, Class I Permitting Branch
Bureau of Air Pollution Control

MAD/tu
Enclosure: Response to Comments
Cc with enclosures:
(1) Gerardo Rios, Chief (A-5-1), Permits Office, Air Division,
U.S. EPA, Region IX, 75 Hawthorne Street, San Francisco, CA 94105
(2) Roger Kohn, USEPA, kohn.roger@epamail.epa.gov
(3) Tanya Gulesserian, tgulesserian@adamsbroadwell.com
(4) Joseph P. Sells, Nevada Cement Company, jsells@nevadacement.com

Response to Comments on the Draft Operating Permit to Construct
For
Nevada Cement Company
Permit AP3241-2201, FIN A0030

This document details the Nevada Division of Environmental Protection, Bureau of Air Pollution Control's (NDEP-BAPC's) response to comments received during the public comment period for the Nevada Cement Company's Operating Permit to Construct application. Comments were submitted both in writing and orally. There were several commenters who generally supported the construction of the new cement production facility. The NDEP-BAPC notes those comments for the record, however, since they were not technical in nature, the NDEP-BAPC is not specifically responding to them.

One commenter offers an opinion that a description of netting, both in general under the PSD regulations and specifically for this action, would be a useful addition to the document. Another commenter states that by characterizing the project as a minor modification, NCC only compares the air pollution from the new plant to the air pollution from the old plant. This commenter asserts that NCC only considers whether the increase in the emissions trigger the federal Clean Air Act's Prevention of Significant Deterioration standards that require installation of Best Available Control Technology. By inflating the baseline, and making the existing project appear or look as dirty as possible, and then deflating the proposed project's emissions, the permit review makes that increase between the two appear as small as possible so that the federal clean air acts requirements aren't triggered. Thus, the dirtier the old plant, the smaller the increase and the cleaner the new plant appears.

Response:
The second commenter is correct in stating that NCC compared the proposed emissions from the new plant to the emissions from the old plant. This is specifically allowed by law, and has been for decades. The federal Prevention of Significant Deterioration (PSD) regulations contained in 40 CFR 52.21, which are adopted by NDEP-BAPC, allow for the comparison of the emissions resulting from a change at a Major Stationary Source with the actual emissions prior to the change. NCC opted to use the actual to potential test allowed under 52.21(a)(2)(iv)(d). 52.21(b)(2)(i) is the definition of major modification. A Major Modification is any physical change in or change in the method of operation of a major stationary source that would result in: a significant emissions increase of a regulated NSR pollutant; and a significant net emissions increase of that pollutant from the major stationary source.

The actual emissions are determined in accordance with 52.21(b)(21)(ii) for the calendar years 2004 and 2005, as applied for by NCC. As detailed in the NDEP-BAPC's technical review document, the average actual emissions for the baseline are determined based on the facility's actual yearly throughput rates and the appropriate pollutant specific emission factors, including emissions testing information where available. These process related emission values are not inflated, they are based on actual performance and emissions data from the plant for the specified year, in accordance with the regulations, and not for appearances as the commenter alleges. Again, as detailed in NDEP-BAPC's technical review document, the new proposed emissions (or

potential to emit) are estimated based on NCC's requested yearly throughput rates, pollutant specific emission factors. This is a worst-case applicability determination.

The net emissions increase is determined, based on the requirements in 52.21(b)(3)(i), as the difference between baseline emissions for 2004 and 2005 calendar years and the potential to emit of the new facility. The proposed new facility does not result in any increases in applicable criteria pollutant in excess of the Significant Emission Thresholds for PSD review purposes based on the net emissions increase (see NDEP-BAPC's technical review emission calculation spreadsheets). Therefore, the proposed new plant is not a major PSD revision and does not require any further PSD review at this time.

A commenter states that if the plant were proposed elsewhere in town it would not be able to rely on only the increase between the two plants, but would rather have to admit that the project emits more than 3,300 tons per year of air pollution including more than 95 tons per year of hazardous air pollutants; which, clearly in of itself requires best available control technology.

Response:
Again, the commenter is correct inasmuch as had NCC proposed the new cement production facility at any other location, it would have been major for PSD permitting purposes and would have required a best available control technology (BACT) review. However, as detailed in the previous response, because the change in emissions from baseline actual to potential was not major for PSD, a PSD permitting action was not required for this facility. The public notice provided the facility-wide potential to emit for NCC. The technical support document and public hearing presentation all detailed both the baseline actual and the facility-wide potential to emit.

It should be noted that the NDEP-BAPC's technical review identifies that NCC's existing total permitted emissions for all criteria pollutants is about 5,763 tons per year. The new plant's total permitted emissions for all criteria pollutants is about 3,240 tons per year. There is a net permit limit reduction of approximately 2,523 tons per year of criteria pollutants as a result of the new permit.

As part of our PSD review, NDEP-BAPC evaluated all pollutants listed in 40 CFR 52.21(b)(23) to determine if the changes were significant. These pollutants were specifically identified in NDEP-BAPC's technical review emission calculation spreadsheets. For HAP emissions, NDEP-BAPC consulted 40 CFR 52.21(b)(50) and determined that HAPs not specifically listed in 52.21(b)(23) that are regulated under Section 112(b)(2) of the Clean Air Act are not regulated NSR pollutants and, therefore, are not part of the PSD significance evaluation and do not require a BACT analysis.

While it is true that there is an increase in the potential to emit for HAPs (approximately 77 tons per year), this is due to how the potential HAP emissions were estimated. The OPTC application used the EPA AP-42 emissions factors to estimate their HAPs emissions, which results in more conservative (higher) estimates. By using a more conservative method, this made NCC subject to the Maximum Achievable Control Technology control program [National Emission Standards

for Hazardous Air Pollutants (NESHAPs) from the Portland Cement Manufacturing Industry, 40 CFR Part 63 Subpart LLL]. This requires specific controls, emission limits, testing, reduction standards and monitoring for not only HAPs, but criteria pollutants as well.

One commenter states that BAPC does not discuss how the proposed emission limits were determined in the Technical Review document. The commenter then offers that a new "state-of-the-art preheater/precalciner kiln equipped with low NOx burners can achieve an emission rate much lower than BAPC is proposing in the draft permit." The commenter then states "the permitted emission limit should reflect current technologically feasible emission rates." The commenter closes with examples of two cement projects not triggering PSD with NOx emission rates below NCC's proposed rates.

Response:
The technical review document does discuss the potential to emit calculations in the Tables attached to the document. NDEP-BAPC notes the remainder of the comment regarding achievable emissions at other plants, however, since this change is not major for PSD, and given the overall reductions in permitted emissions and air quality impacts less than the ambient standards, NDEP-BAPC is satisfied that limits expressed in the draft permit are sound and, in fact, represent the state of the art.

One commenter stated that the application evaluation failed to evaluate $PM_{2.5}$ and CO2 emissions.

Response:
$PM_{2.5}$ is a regulated air pollutant. It was added to the suite of pollutants by the EPA in 1997, challenged in court and delayed in implementation. NDEP-BAPC is still in an implementation phase-in period for this pollutant. EPA has not provided implementation rules, guidelines or guidance to States to implement the $PM_{2.5}$ standard for stationary sources. EPA guidance clearly establishes that PM_{10} is to be used as a surrogate for $PM_{2.5}$ for new source review purposes. In a 1997 guidance memo, EPA stated the following:

> "In view of the significant technical difficulties that now exist with respect to $PM_{2.5}$ monitoring, emissions estimation, and modeling (described below), EPA believes that PM10 may properly be used as a surrogate for $PM_{2.5}$ in meeting NSR requirements until these difficulties are resolved."[1]

EPA's subsequent $PM_{2.5}$ guidance does not indicate any change in EPA's position. A 2005 guidance memo re-stated EPA's policy regarding new source review requirements for $PM_{2.5}$:

> "On October, 23, 1997, we issued a memorandum addressing the interim use of PM_{10} as a surrogate for $PM_{2.5}$ in meeting Prevention of Significant Deterioration of Air Quality Program (PSD) provisions for $PM_{2.5}$ as required by title 1, Part C of the Act. See Memorandum from John S. Seitz, Director Office of Air Quality Planning and Standards, to Regional Air Directors, Interim Implementation of New Source Review for $PM_{2.5}$ (Oct. 23, 1997). This

[1] *"Interim Implementation of New Source Review Requirements for PM 2.5",* EPA Memorandum, October 23, 1997.

> memorandum referenced provisions of Part C of the Act which we interpret to require PSD permits for $PM_{2.5}$ upon the effective date of the $PM_{2.5}$ NAAQS, and identified significant technical difficulties with implementing PSD for $PM_{2.5}$ because of limitations in ambient monitoring and modeling capabilities. Because we have not promulgated the $PM_{2.5}$ implementation rule, administration of a $PM_{2.5}$ PSD program remains impractical. Accordingly, States should continue to follow the October 23, 1997 guidance for PSD requirements."[2]

Additionally, the 2005 EPA memo addresses regulation of $PM_{2.5}$ precursors under the new source review program:

> "To date, the Administrator has not identified any precursors to the formation of $PM_{2.5}$ for purposes of the major NSR program… In the Clean Air Interstate Rule, we require states to reduce emissions of NOx and SO2 on the grounds that they are precursors for $PM_{2.5}$. However, several novel issues need to be resolved before the NSR program can be applied to $PM_{2.5}$ precursors (e.g., how many SO2 or NOx offsets will be needed to accommodate the fine particles formed by these constituents; can SO2 emissions reductions be used to offset NOx emissions, and vice versa). We plan to request comment on regulating these pollutants and other potential $PM_{2.5}$ precursors for purposes of major NSR in the $PM_{2.5}$ implementation rule."[3]

EPA's Clean Air Fine Particulate Implementation Rule was promulgated on April 25, 2007; however, this rule did not contain any new source review requirements for $PM_{2.5}$:

> "Note that this rule does not include final $PM_{2.5}$ requirements for the new source review (NSR) program; the final NSR rule will be issued at a later date."[4]

Therefore, the NDEP is not required to address $PM_{2.5}$ at this time.

At this time, carbon dioxide (CO_2), is not a regulated pollutant. The Supreme Court in Massachusetts versus EPA did rule that EPA may regulate CO_2. EPA to that point had not chosen to regulate CO_2 and the specific case that was sited is actually related to a motor vehicle suit, and as such, is not currently subject to stationary source regulations. The state of Nevada is engaged in the national climate change process. The Nevada Legislature passed a statute in the last legislative cycle (SB422) that does address reporting and monitoring of CO_2 emissions from stationary sources, specifically power plants. So Nevada is engaged, and NDEP is implementing a process to determine what greenhouse gas emissions are being emitted from stationary sources. But CO_2 is not a regulated pollutant for stationary sources under the Clean Air Act as of yet. Should CO_2 regulation become applicable to stationary sources, NDEP-BAPC will implement applicable rules or standards for stationary sources like we do any other regulated pollutant for which EPA publishes a standard.

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[2] *"Implementation of New Source Review Requirements in PM-2.5 Nonattainment Areas",* EPA Memorandum, April 5, 2005.
[3] Ibid.
[4] 72 FR 20586, April 25, 2007.

One commenter noted an apparent discrepancy in the vehicle miles traveled. The permit review uses 27 miles a day for vehicle miles traveled and the proposed project uses 29 miles, vehicle miles per day. The small difference in vehicle miles traveled is not credible based on the fact that the proposed facility is proposing to produce twice as much cement as the existing facility. Commenter then presumed the change in distance will be negligible and calculated just the increased product that needs to be brought to the facility. Commenter calculated an increase in PM10 and PM emissions of 2.3 tons per year.

Another purported issue identified by a commenter was that the calculation is different for the determination of baseline and proposed emissions. The commenter asserted that the baseline calculation is based on miles per day and average kiln operating hours. Then the commenter asserted that the proposed emissions are based on miles per day and the weight of products hauled per day. The commenter wants to make sure that an "apples to apples" comparison was conducted between baseline and future potential emissions.

Response:

Paved Haul Roads

The calculations for fugitive emissions from vehicle miles traveled onsite were provided by NCC in responses to technical comments by NDEP-BAPC during the application review. The calculations were received by NDEP-BAPC on May 7, 2007 and June 8, 2007. These responses by NCC were also made available to the commenter and are part of the record for this permitting action. NDEP has verified these calculations based on this comment and notes that NCC properly calculated vehicle miles traveled. Based on this comment it appears that the commenter is confused as to what material is being hauled to what location. Here is a short discussion in order to clarify the record.

Paved haul road emissions were calculated using the amount of limestone brought from the off-site quarries to the crusher. The limestone is hauled from the quarries (quarry operates under separate air quality permits) via public roads/highways and brought on-site to the NCC crusher via a paved road approximately 900 feet long. The NCC paved haul road's round trip distance is 1,800 feet (0.34 miles). For each baseline year (2004 & 2005) the derivation of the vehicle miles traveled (VMT) is as follows:

(tons of limestone/yr) (yr/365 days) / (truck capacity) = trips/day
(trips/day) * (round trip distance in miles) = VMT/day

This equates to 26.6 VMT/day for 2004 and 27.1 VMT/day for 2005 as follows:

(713,012 ton LS/yr) (yr/365 days) / (25 tons) = 78.14 trips/day
(78.14 trips/day)(0.34 miles) = 26.6 VMT/day (2004)
(728,050 ton LS/yr) (yr/365 days) / (25 tons) = 79.8 trips/day
(79.8 trips/day)(0.34 miles) = 27.1 VMT/day (2005)

For the proposed emissions, the VMT were calculated the same way. The derivation of VMT is as follows:

(tons of limestone/yr) (yr/365 days) / (truck capacity) = trips/day
(trips/day) * (round trip distance in miles) = VMT/day

This equates to 56 VMT/day for the new proposed allowable as follows:

(1,500,000 ton LS/yr) (yr/365 days) / (25 tons) = 164 trips/day
(164 trips/day)(0.34 miles) = 55.8 VMT/day (proposed allowable)

As shown, 56 VMT/day is approximately twice the VMT/day of the baseline used for the existing facility, as would be expected when almost doubling the capacity of the plant. NCC's permit limits total clinker production to 135 tons per hour, which equates to 1,182,600 tons on clinker per year. Clinker includes not only the limestone, but the other raw materials needed to manufacture cement. NCC conservatively used 1,500,000 ton/yr of limestone hauled to the crusher, therefore, overestimating the paved haul road emissions.

Unpaved Haul Roads

The existing unpaved haul roads are used for hauling additives and for placing cement kiln dust (CKD) in the CKD landfill area daily. The unpaved haul road emission calculations for the baseline emissions were based on the best data available during this time frame (2004 and 2005). Derivation of VMT for baseline emissions was not as straight forward as it was for paved roads as the amount of additives and CKD hauled around is not tracked. However, NCC vehicle operators on average travel approximately 9 miles per shift every day which equates to 27 VMT/day. As such, 27 VMT/day was used in conjunction with the average of the annual hours the two kilns operated in order to come up with an annual VMT/yr value. It should also be noted that the current VMT (baseline) for the unpaved haul roads includes the haulage of the CKD to the placement area. This is approximately an additional one-way distance of 1,500 feet (0.28 miles) or round trip distance of 0.57 miles added to the normal unpaved round trip distance of 2,000 feet (0.38 miles) for a total round trip unpaved baseline distance of 0.95 miles. This permit will no longer include the placement of CKD, which results in a reduction of unpaved haul road emissions as well as a reduction in exposed acreage (4.5 acres) emissions.

For the proposed allowable emissions, the VMT were derived the same way as for the paved road emissions because we know the amount of potential additives that will be needed for the proposed modification. Since there will no longer be an unpaved road for hauling CKD, the total round trip distance is only 0.38 miles (reduction of 0.57 miles) The derivation of VMT is as follows:

(tons of limestone/yr) (yr/365 days) / (truck capacity) = trips/day
(trips/day) * (round trip distance in miles) = VMT/day

This equates to 29 VMT/day for the new proposed allowable as follows:

(700,800 ton additives & gypsum/yr) (yr/365 days) / (25 tons) = 77 trips/day

(77 trips/day)(0.38 miles) = 29 VMT/day (proposed allowable)

As stated, the reason for the similar value of 29 VMT vs 27 VMT is due to the significant decrease in unpaved haul road distances and design of the new proposed facility.

One commenter notes that while Table 4.1.a of the Technical Review includes fugitive PM_{10} emissions in the facility-wide potential to emit estimates, it is not clear that fugitive PM_{10} emissions were included in the facility's baseline actual emissions. The commenter asks for clarification on how the fugitive PM_{10} portion of the net emission change was calculated.

Response:
As discussed previously, the fugitive emissions are detailed in the May and June 2007 response to comments. NDEP-BAPC's emission calculation spreadsheets for the 2004 and 2005 calendar years also identify that fugitive emissions were included in the facility's baseline actual emissions. The calculations were also in the summary spreadsheet for determining the net emissions increase for the NDEP- BAPC's PSD/NSR review determination.

One commenter stated that the calculations do not include hauling limestone or clinker. According to the commenter, limestone hauled will increase from 713,012 tons per year from the baseline in 2004 to 3,660,000 tons per year for the proposed project.

Response:
It appears that the commenter is assuming that 350 ton/hr of limestone (3,066,000 ton/yr – assuming 8,760 hr/yr) is hauled to the plant, based on the maximum design rate of the crusher. However, this is not feasible, as the kiln is only rated at 135 ton clinker/hr (ton CL/hr) which equals 1,182,600 ton CL/yr. This amount of clinker is equivalent to 1,903,986 tons of raw material feed to the kiln annually, of which 613,200 ton/yr is additives (iron ore = 43,800 tpy, clay = 175,200 tpy, sand = 87,600 tpy, pozzolan = 306,600 tpy), which leaves 1,290,786 tons/yr of limestone feed to the kiln annually. Further, it should be pointed out that for conservatism, NCC modeled the point sources based on the maximum rated capacity of the equipment, which for the crusher was 350 ton/hr of limestone and 3,066,000 ton/yr, which may be why the commenter assumed the amount of limestone hauled will be two times the 1,500,000 tpy of limestone used in the paved road emissions calculations.

One commenter asked for the distance between the quarry and the plant and increases/decreases in emissions from haul roads, storage piles and other fugitive PM10 emission sources.

Response:
The distance from the nearest limestone quarry is 5.5 miles via public roads/highways. Due to the distance between the quarries and the NCC cement production facility, any potential increase in quarry operations are not included in this analysis. The quarries are regulated under separate air quality operating permits. All on-site production plant fugitive emissions have been considered. See the above discussion regarding calculation of fugitive emissions for more detail.

One commenter states that the permit fails to take into consideration the NDEP-BAPC's recent approval of a Nevada Cement project to collect and sell cement kiln dust. The commenter asserts that even if one argues that this is a separate project, the permit contains a fatal flaw in that the NDEP-BAPC's review does not include emissions from the cement kiln project in the baseline but then it takes credit for elimination of wind erosion emissions from the cement kiln exposed areas by deducting those emissions as if it's part of the project. The commenter then alleges a manipulation of the baseline and proposed project emissions.

Response:
NCC's minor revision permit to include Systems 29(a) & (b) for Cement Kiln Dust (CKD) collection was issued on October 30, 2006. System 29 was added to collect CKD through enclosed conveyor systems. For PSD/NSR review determination purposes, NCC's average actual emissions were considered for the period January 1, 2004 through December 31, 2005 as discussed previously. During that period, there were no enclosed conveyor systems to collect CKD. Emissions for wind erosion of CKD are appropriately included in the baseline for these years. The new plant's operations stand on its own and have been discussed previously in these comments. All future production activities are accurately characterized in the draft OPTC. Any system that is not permitted to operate under the OPTC will be required to cease operations at the time the new facility begins operations. The CKD process is not permitted under the new OPTC and will not be allowed to operate.

One commenter raised concerns about mercury emissions from the project. The commenter asked whether there had been any evaluation of the mercury content of the cement or limestone processed. The commenter then asked whether there would be any continuing assessment of limestone mercury content as quarry operations expand. Commenter asked what would be the power/fuel source for the kiln and the associated mercury emissions from the fuel.

Another commenter expressed understanding that NCC has not had the feedstock limestone analyzed for mercury content. This commenter sees this as a necessary first step in the determination of the potential to release mercury. The commenter then goes on to quote from the MACT regulations regarding emissions from cement kilns, specifically 40 CFR 63.1343. Commenter seeks clarification as to how NCC is currently complying with this standard.

Response:
There is no requirement either in the code of federal regulations or in the Nevada administrative code regarding assessing the mercury content of the feedstock limestone or the fuel consumed in the cement production process. The NESHAPS/MACT regulations quoted by the commenter are the performance standard for mercury at the exhaust stack of the kiln. The MACT provisions are applicable to the new kiln NCC must comply with this performance standard. Since the standard is at the exhaust of the combustion process, and there is no requirement in the standard for determining the mercury content of the ore or fuel, there is no requirement in the permit for fuel or limestone mercury analysis. NCC's current processing facility is a minor source for HAPs and is not subject to the NESHAPS provisions.

One commenter asked whether the proposed plant is a wet or dry process.

Response:
The proposed plant will have one single dry process kiln.

One commenter recommended that BAPC add average lb/ton of clinker limits to the lb/hour limits for all new kiln limits.

Response:
The NDEP-BAPC does not see the benefit of adding a lb/ton of clicker limit for any pollutant listed. The PM_{10} emissions are controlled by a fabric filtration system and the emissions from that system cannot be directly related to clinker production. The gaseous pollutants (NO_x, CO, SO_2) are monitored by continuous emissions monitoring systems to provide real time continuous emissions data for all applicable emissions limitation requirements. Since the MACT applies to NCC's new kiln, it is specifically exempted from the Portland Cement New Source Performance Standard (NSPS), 40 CFR Part 60 Subpart F (40 CFR 63.1356). The MACT provisions do no have a performance based limit associated with them for the kiln. Since the NSPS does not apply, and this permit action is not a major PSD action, a performance based limit at NCC is not necessary, nor is it required.